



# the CARRIER.....

Published Monthly by the Mount Diablo Amateur Radio Club

MDARC FIELD DAY CALL W6CX; 2M REPEATER WR6AHK; 220 REPEATER WR6ARG; MEMORIAL CALL SIGN W6LGW	
Volume XXVI	DECEMBER 1978
	No. 12
Pres. '78 & Treas. '79...WA6OJT Dick Webster 3415 Sweet Dr. Lafayette CA 94549	284-2046
President '79.....W6AMH Hank Herting 527 Banyan Cir. Walnut Creek CA 94598	935-4032
Vice-Pres. '78.....WA6IRZ Stan Bringer 1920 Gilly Ln. Concord CA 94518	689-0989
Vice-Pres. '79.....WA6MWU Chuck Welch 102 Rolling Green Cir. P.H. CA 94523	676-5262
Secretary '78 & '79.....WB6FOA Salley Nikkel 778 Harvard Dr. Pleasant Hill CA 94523	
Treasurer '78.....WA6TML John Clyde 94 Meadow View Rd. Orinda CA 94563	254-5445
E. C. '78 & '79.....W6LKE Dwayne Eskridge P.O. Box 5502 Walnut Creek CA 94596	932-3971
Board Member '77 & '78...WA6GBB Bob Muench 836 Santa Maria Way Lafayette CA 94549	284-5445
Board Member '78 & '79...W6PFW Ted Durst 9 San Ardo Ct. Walnut Creek CA 94598	937-1463
Board Member '79 & '80...WB6BIX Harry Howe 5 Las Vegas Rd. Orinda CA 94563	254-5276
1978 Committees: Education Ch. WA6MWU; Door Prize Ch. WB6TZQ; Membership Ch. WB6BIX; TVI	
Comm. K6DQL, K6IMV, N6GQ, K6VLH; Repeater Grp. Ch. WB6PUA; Rptr. Grp. Treas. WB6DHH; Christmas	
Party Comm. WA6ODA, VE2AQV, WB6EKT, AI6V, YL Joanne (WA6GBB and others; November CARRIER	
Typists, Printers, Assemblers, and Mailers: Joe Jacksa W6CSV, Doug Lortsher W6KLM & family,	
Warren WB6AEG and Lois Peterson, Fred WA6JLF and Beth Sabott, Parky K6IMV and Lee K6OBB	
Parkinson, Frank N6GQ and Alma Calton, Hal W6CU and Mildred Mumford. Please do not submit	
news for the January 1979 CARRIER to the retiring editor W6CU. Instead submit news to VE2AQV	
and W6AMH. Articles printed in the CARRIER can be quoted provided adequate credit is given.	

## \* \* \* PARTY NOTICE \* \* \*

This month's get-together of the Mount Diablo Amateur Radio Club is:

A POTLUCK  
CHRISTMAS PARTY  
  
AT THE  
PLEASANT HILL RECREATION HALL  
  
SUNDAY DECEMBER 17, 1978  
  
DOORS OPEN 6:30 PM  
  
PRIZES MUCH FUN

Reservations are necessary. If you have not already done so, fill in the Christmas Party reservation form that is being sent with this CARRIER.

There will be no regular meeting of the Club in December on the "third Friday of the month."

## Other Reminders

Education Committee meets at the QTH of W6AMH on the evening of January 2, 1979.

Board Meets at the QTH of Chuck Welch 102 Rolling Green Circle, Pleasant Hill 8 p.m. January 3, 1979.

Classes Start Again at College Park High School, Tuesday January 16, 1979 7-10 p.m. Volunteers are always needed for teaching and for sending code. Phone Chuck Welch 676-5262 or Hank Herting 935-4032.

Payment of 1979 Club Dues of \$5 can be made now. Avoid the rush. All new and renewing members are requested to fill out the new application/renewal form that is being sent with this CARRIER.

TO THE MEMORY OF  
GIL MUSSER WA6IWG  
SILENT KEY  
NOV. 26, 1978



M.D.A.R.C. MEETING NOVEMBER 17, 1978

Club was called to order at 8:05 p.m. by President Dick Webster, WA6OJT.

A number of visitors and first time visitors introduced themselves. Parky introduced Ken Jacoby, K6JAV.

At 8:15 p.m. the nominating comm. retired to tally the ballots.

Charles Marshall WA6PNO and Dwayne W6LKE have been working on a proper design for Emerg. jackets to wear during an emergency to let people know and see the amateurs at work. Charles showed a few and also one on a yellow nylon jacket which he donated to the Club for one of the prizes drawn. Ted Durst W6PFW won. Thank you Charles for this donation. Our Club is indeed fortunate to have such a gifted and willing worker as you.

The Club voted to donate \$250.00 to be used for prizes at our Christmas party December 17.

Chuck WA6MWU appealed for anyone with a General Class ticket or higher to help at radio classes giving novice exams. Please come to College Park High School on Tuesday nite at 7.

Meeting adjourned at 8:45 for visit and coffee.

Nominating Comm. returned the following results of the election of 1979 officers-elect. President: W6AMH Hank Herting, Vice Pres. WA6MWU Chuck Welch, Secretary WB6FOA Salley Nikkel, Treasurer WA6OJT Dick Webster, Emergency Coordinator W6LKE Dwayne Eskridge, Board Member WB6BIX Harry Howe.

At 9 p.m. Stan, Vice-President WA6IRZ introduced Dennis Iverson. Subject: Integrated Circuits Use and Manufacture. Very interesting and enjoyed by all.

Respectfully submitted

Salley Nikkel WB6FOA  
Secretary

M.D.A.R.C. BOARD MEETING NOV. 27, 1978

Board met at QTH of Dick and Cynthia Webster on Sweet Drive in Lafayette.

President Dick WA6OJT called the Board to order at 8:07 p.m. The following board members present: Secty. WB6FOA, Treas. WA6TML, two board members WA6GBB and W6PFW.

The following club members present were: W6AMH President Elect., WA6MWU Vice President Elect, K6IMV, W6CU, VE2AQV, WB6TZQ and K6VLH.

The minutes of the last Board meeting were approved as printed in the CARRIER.

The Board thanks all who donated to the Santa Claus Christmas party fund for the children.

A motion was made and carried that the Club approve up to \$50.00 for the plaques to be presented at the Christmas party.

Treasurer's report was approved as \$678.74

checking and \$652.72 saving.

Auditing Comm. appointed are: WD6APL, WA6OJT and K6IMV.

Education Comm.: Chuck WA6MWU reported that the classes at College Park are completed by first week in Dec. He requested again for help in giving the Novice exams also the "buddy" system in getting new Novices on the air.

January Board meeting will be at the QTH of Chuck Welch WA6MWU and the January 29th meeting at President Elect, Hank W6AMH QTH.

All applications for membership in MDARC should be mailed to Dick Webster, Treas. Elect. at his address, 1315 Sweet Drive, Lafayette, CA 94549.

Emerg. Coordinator was not present. A discussion on the jacket logo and the decision was made to have the Club members order and pay in advance for his or her own jacket. The price will be set by the Board at the next board meeting. Chuck WA6MWU was appointed to meet with Charles Marshall WA6PNO and Dwayne W6LKE to decide on the logol for the jacket.

TVI Comm. No problem.

S.E.T. will be January 27th and 28th. Suggestions can be made to Dwayne W6LKE.

Ted Durst W6PFW volunteered to read the CARRIER on tapes for our sightless members.

A motion was made to donate \$15.00 to the memory of Gil Nusser WA6IWG. The motion carried.

Motion made and carried that the money received from advertising be used for prizes.

Meeting adjourned. Thank you Cynthia and Dick for delicious refreshments.

Respectfully submitted

Salley Nikkel WB6FOA  
Secretary

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ADDITIONAL CHANGES AND ADDITIONS TO THE  
OCTOBER ROSTER WHICH IS/WAS AVAILABLE FOR \$1

Steve Overacker WA6HAM has the same address but a new phone number which is 944-9921.

Until Dec. 31, 1978 contact the retiring editor W6CU if you need the phone numbers or addresses of the following new members: Mark Peal KA6CMG, Glenn Barbour WA6KEQ ( a former member who rejoined), John Teale KA6CRB, Bob Young W6FDS, Scott Miles WB6PQM, Don Welk KA6CXY, Vern Hajek K6UGS.

After Dec. 31, 1978, or until further notice, or until the next membership list is printed, ask Hank Herting W6AMH for the addresses etc. of these or additional new members.

In the meantime, congratulations and welcome to the Mt. Diablo Amateur Radio Club.

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## The President's Corner

The entire Board of Directors of the Mount Diablo Amateur Radio Club want to wish each and every one of you a Merry Christmas and a Happy New Year.

The past year has offered me a challenge, and it has certainly been a prosperous and exciting one for the MDARC. Thank you, all who have contributed to the Club this year. It is a pleasure to be your president, and I challenge you to support Hank and the new Board this year.

Together, we can continue to improve the largest, most powerful, and most active radio club in Northern California.

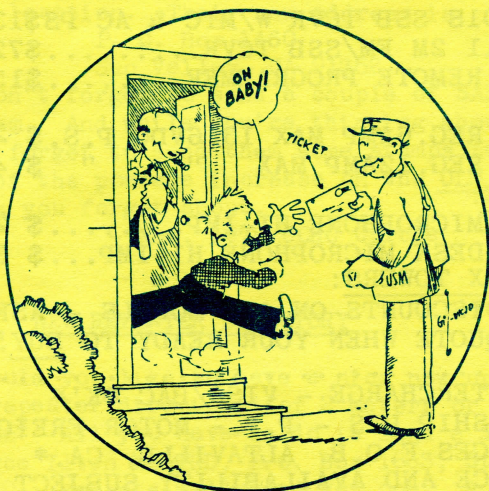
See you at the Christmas Party.

Dick Webster

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Remember when you got your first Amateur Radio License?

We extracted this picture from the January 1934 issue of QST.



## REPEATER NEWS

The last meeting was held on 11-20-78, and the following officers of the Mt. Diablo Repeater Group were elected:

Repeater Trustee	-- Carl D. Cook
Chairman	-- Don Gilley
Treasurer	-- Paul Parker
Steering Committee	-- Richard Thomas
Members	-- Chuck Welch

The past year as chairman of your repeater has been one heck of a year and I enjoyed being your repeater chairman. I would like to thank all of the members who helped me through the year. The repeater has worked like a jewel, in spite of jammers, and work being done on the hill by our landlord. The 220 repeater has worked without one hitch the whole year, and at present is one of the best machines I have talked over. You have to try to believe it. Our antennas will be on the new tower shortly with a new duplexer and the system should really be good.

I have expressed my opinion regarding the "alternate Private" repeater and will not say any more. I have not changed my mind after seeing how it is working. I am still against the POU/RPT using the phone of ARG. As long as POU remains a private repeater, their system should not be tied to the club machine in any manner.

I would like to give my special thanks to Don Gilley, our repeater technician, who got the touch tone system and the phone going. Since he has been working on the machine there have been almost no failures. The finals seem to last forever and he has made the 220 machine into a really fine repeater.

Special thanks also goes to Dick Thomas "ODA" who has really been a watchdog over the repeater. Dick has informed me of all the events that have occurred on the repeater when I have not been available and has been an outstanding operator. He is going to be an outstanding member of the steering committee.

A word to the jammer of the repeater. If you are a member of the Club, which seems to be a possibility, we will find you. If you are a HAM you are a disgrace to the HAM fraternity. The repeater group is dedicated to finding you out, who you are, and the appropriate action will be taken when that time occurs. I repeat, you will be found out, come Hell or High Water.

The club dues will remain the same for the next quarter. The Club took in several fine new members. Welcome to the repeater. I will give my assistance if desired to the new officers. I again thank all who have assisted me. I enjoyed being your chairman. See you on the air.

- Jay D. Caldis WB6PUA



Warning: "At the recommendation of the International Time Bureau, a leap second will be inserted into the time broadcast of stations WWV, WWVH, and WWVB. Commencing at 23 hours 59 minutes 60 seconds UTC on December 31, 1978 an extra second will be inserted into the NBS time scale. This adjustment is required to maintain the internationally coordinated universal time as broadcast from these stations in close agreement with UT 1 or astronomical time."

- Taken from a WWV broadcast

One way to look at it - Of the 1602 clubs, groups, or individuals that sent in 1978 Field Day reports, W6CX was among the upper 2% in respect to number of contacts.

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2. TR-7400A with Astron 12A/PS	\$449	\$399
3. TS820-S	\$1249	\$978

ICOM

IC-280	\$479	\$369
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\* Mastercharge/Visa accepted

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736-2612 (209) DOUG - W6HVN

\*\*\*\*\*

NEW GEAR - FACTORY SEALED CARTONS

ATLAS:

RX-110 80-10M RECEIVER .....\$199.  
TX-110L 80-10M TRANSMITTER....\$139.  
TX-110H 80-10M TRANSMITTER....\$219.  
PA-200 POWER AMPL. MODULE.....\$ 79.  
PS-110 AC PS - 200W TCVR.....\$ 79.  
210X 80-10M SSB TRANSCEIVER...\$649.  
215X 160-15M SSB TRANSCEIVER...\$649.  
220CS AC PS CONSOLE.....\$129.  
DMK DELUXE MOBILE MOUNT.....\$ 45.  
DL-200 WATT DUMMY LOAD.....\$ 12.  
DCC DC BATTERY CABLE.....\$ 11.  
CLC DC LIGHTER PLUG CABLE.....\$ 11.

BENCHER:

BY-1 MODEL KEYS PADDLES.....\$ 35.

CURTIS:

EK-430 ELECTRONIC KEYS.....\$110.

R.L. DRAKE:

MN-7 (TR-7 STYLE) ANTENNA TUNER WITH  
B-1000 BALUN.....\$165.  
MS-7 (TR-7 STYLE) SPEAKER.....\$ 29.  
WH-7 (TR-7 STYLE) SWR/WATTMETER\$73.  
1525EM TOUCHTONE MICROPHONE...\$ 43.

HY-GAIN:

14AVQ 10-40 TRAP VERTICAL.....\$ 50.  
18AVQ 10-80 TRAP VERTICAL.....\$ 75.  
TH3MK3 3EL 10-15-20M BEAM.....\$159.  
TH6DXX 6EL 10-15-20M BEAM.....\$199.  
105BA 5EL 10M MONO BAND BEAM..\$ 95.  
153BA 3EL 15M MONO BAND BEAM..\$ 59.  
204BA 4EL 20M MONO BAND BEAM..\$159.

ICOM:

IC-701S SSB TCVR W/MIC & AC PS\$1379.  
IC-211 2M FM/SSB TCVR.....\$729.  
RM-2 REMOTE PROGRAMMER.....\$159.

NPC:

4AMP REG.6AMP MAX 13.6VDC P.S.\$ 29.  
8AMP REG.12AMP MAX " " \$ 45.

SHURE:

404C MICROPHONE HI-IMP. ....\$ 25.  
444 DESK MICROPHONE HI-IMP...\$ 33.

TRI-EX TOWERS:

BIG DISCOUNTS ON ALL MODELS - ASK  
FOR QUOTE WHEN YOUR READY TO BUY!

\*\*\*\*\*  
\* MASTERCHARGE - VISA/BAC OK! \*  
\* WE SHIP UPS - P.P.- MOTOR FREIGHT\*  
\* PRICES F.O.B. ALTAVILLE, CA.\*  
\* PRICE AND AVAILABILITY SUBJECT TO  
CHANGE WITHOUT NOTICE\* THANK YOU!

*Send S.A.S.E.*  
*for "1/2 off" closeout list*



### CHRISTMAS IS MORE THAN TINSEL

An editorial by retiring editor W6CU

I'm no authority on theology and I don't want to be. However, there are times in the lives of all of us when our hearts and minds are tuned in to the kind of truths that are often neglected. Christmas can be such a time. It is more blessed to give than to receive. Personalities can improve, even as it happened to Scrooge in Dickens's "Christmas Carol".

Do you believe in miracles? Ham radio is a miracle isn't it? Isn't all life a miracle?

Many truths which touch the heart come to us in terms of parables or as events that have meaning. But if the meaning is perceived, where is the line of demarcation between the words and the meaning? That line of demarcation is not the same for everybody and sometimes the meaning is missed completely.

Is there such a thing as the beginning of time, or the end of space? These things I don't understand. Therefore, I have no pat theory on such imponderables.

Is there a message and is there truth in the Christmas story and that which goes with it? Yes. The signal is loud and clear. And I like the Bible verse where Jesus speaks to Thomas after he had doubted, saying: "because thou hast seen me, thou hast believed: blessed are they that have not seen, and yet have believed."

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### 6th DISTRICT QSL BUREAU CHANGE

The 6th District QSL Bureau has moved to a new location. Their new address is:

P. O. Box 1460

Sun Valley, CA 91352

Don't forget to send a couple of SASE's to them. And while you're thinking about it, don't forget to send them some stamps to take care of the postage increase on the OLD SASE's you forgot about.

- Nov. 1978 CCRC Circle

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### NEW REPEATER DIRECTORY

Would you like to have a nice new up-to-date repeater directory for 2 meters or 220 MHz? All you have to do is send a SASE to Joyce Ilten WB6IHD, P.O. Box 1863, Stockton CA 95201, and she will send you one. Any additional copies are 5¢ each. A real bargain!

- Nov. 1978 CCRC Circle

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### "SPEAKER MIKODER"

By Jack Gott WA6KGI

I have a Wilson WE-800. I got it last year for Christmas. It is an outstanding radio, I think, to use portable or mobile. I do quite often.

It does have, however, a major drawback. It has no touch tone pad. It also has no built-in speaker. It comes with a speaker-mike. I added a touch tone pad to the speaker-mike.

The Wilson speaker-mike is slightly larger than most other microphones because of the PM speaker inside. There is no room for a battery in it, but there is room for the touch tone electronics, which consists of a crystal, an integrated circuit, and a handful of resistors and capacitors. This means that the power for the touch tone pad must come from the radio. I didn't want to modify my radio (cringe).

I did this. I added a wire from the power switch to the 6-pin microphone jack. The radio has a dpdt power switch. Looking at the bottom of the radio, it is the yellow wire on the power switch that you connect to. Check it with a DC voltmeter to see if plus 12 is there when the radio is on in both high and low power but not in the off position. Connect the other end of your added wire to pin 4 of your mike jack. CAUTION! This wire is grounded in the microphone and must be connected to the touch tone circuit supply line.

I used the touch tone kit available from Poly Paks. I had to modify it though. The circuit is standard and uses the Motorola MC 14410 integrated circuit. I won't go into further detail on this, as it has been published many times in popular magazines.

Next, I got bold and chopped a hole in my microphone and mounted the touch tone pad. I then mounted the electronics - not easy.

Any further discussion would be quite lengthy. The rest is available on a one to one basis with me. I'll be happy to show the WE-800 owners what I did.

For those who don't have the Wilson, my touch tone pad has been doing well for 6 months now.

Be bold. I did. Now I can say I have one of the few speaker-mike encoders around, besides being hand held synthesized.

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A space explorer is a fellow driving around the town looking for a place to park.

- September 1978 SKIP (Fresno ARC)

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### INCOMPLETE CONDENSED HR REPORTS

Russia's "RS" satellites are up and operating - two Amateur (dubbed "Radio-1" and "Radio-2" and one in the COSMOS scientific series COSMOS-1045). The orbit of the RS satellites is about 1050 miles. The uplink is 145.88-145.92 MHz with 29.36-29.40 MHz output. 10 watts ERP puts a good signal into the RS transponder, while a 50-watt ERP signal apparently overloads and shuts it down. RS's period is slightly over 120 minutes and its equatorial inclination about 83 degrees, resulting in an orbit-to-orbit increment of just over 30 degrees. The beacon is on 29.402 MHz. Saturdays and Sundays (UT) are the only days open for general use. Orbits are reported on WIAW bulletins.

No harmful nonthermal effects were found to result from low-level microwave radiation by researchers reporting their results to the recent Symposium on Electronic Fields in Biological Systems in Ottawa Canada.

"At WARC 79 Amateur radio will have, for the first time, a worldwide common position" Dick Baldwin reported after returning from his recent trip to Region 3 IARU Conference in Bangkok. Despite this coordination, Amateur radio won't have an easy time at next summer's conference.

In recent months cutthroat price cutting has become a way of life in the Amateur market with the result that some dealers - particularly those who offer a good deal of services along with their sales efforts - are struggling to keep open.

Operation of the People's Temple colony station WB6MNH/8RI and WB6MID/8RI was brought to the Commission's attention by a number of Amateurs who had observed frequent apparent rules violations.

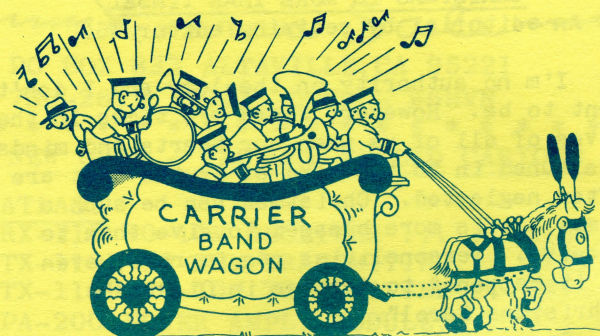
Indications are for an early-December upswing in beneficial solar activity. This should enhance all bands, even 10 meters, despite the approach of solstice.

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... Paul Steyermark of Wilmington, Del., recalls a friend who reported that a series of experiments had produced erratic results. His handwriting was not the best, however, and his secretary typed up the results as "erotic." Steyermark isn't sure what became of the secretary, but believes she was promoted.

- Nov. 6, 1978 CHEMICAL & ENGINEERING NEWS

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### MEMO FROM W6CU TO THE NEW EDITOR/MANAGING EDITOR (Interim and Otherwise)

There is a growing list of members who are getting on the bandwagon to help with the CARRIER. Besides those we usually mention on the front page each time, here is a partial list of those who wrote things for the CARRIER during 1978: Salley Nikkel WB6FOA, Dick Webster WA6OJT, Parky Parkinson K6IMV, Jay Caldis WB6PUA, Jack Gott WA6KGI, Dwayne Eskridge W6LKE, Jim Presley WD6CGS, Nubar Tashjian K6KVX, Jack Campbell WA6ADW, Hank Herting W6AMH, Bob Cook W6UAW, Stan Bringer WA6IRZ, Bob Richter W6HOF, Wendell Peterson K6POU, and Chuck Welch WA6MWU (cartoon).

Being an editor is a sure way of being appreciated by some kind people, as can be seen by the following. Thanks Jay.

### A JOB WELL DONE

I noticed that our CARRIER editor Hal Mumford is finally throwing in the towel after many years as editor of the CARRIER. Hal has been a dedicated editor for many years. When there isn't much to print he finds something of interest for the members. It is a tough job and a thankless one. I for one would like to thank Hal for a job very well done. The CARRIER is a forum for all the members who have something to say but never say it. Everybody says things to each other on the air but never in a way that all the members may hear their opinions. I suggest that whoever the new editor is that the club members support him as you have supported Hal and give him something to print. Make your opinions heard via the CARRIER. Individual experiences, stories, jokes, news of any kind. It is nice to read all this and each of us enjoys reading these various articles. If no one submits, then there isn't much to read.

Thanks Hal for the nice job you have done and I am sure the club members join me in this regard.

- Jay D. Caldis WB6PUA

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## THE BASE STATION

DECEMBER - JANUARY SPECIALS

For Sale: Hammarlund HQ 180 Receiver  
.54 to 30 MHz with Speaker. Excellent  
condition.

Joe Jacksa W6CSV 376-2221

For Sale: Bearcat 210 Synthesized  
Scanner. Covers 32-50, 125-174 and 416-512 MHz.  
Sunson 12 VDC and 117 VAC. \$175.00

G. E. Pacer VHF Base Station. Runs 15w  
and is currently crystallized on the Mt. Diablo  
Navy MARS Repeater. Perfect for a new or  
prospective MARS member. Includes microphone.  
\$60

Complete set of Hustler Mobile Resonators.  
80, 40, 20, 15, and 10 meters. \$35.00

Contact Pete Bergman WB6RZX  
502 Lake Blvd. #239  
Davis, CA 95616  
(916) 756-6298

Coming Sometime Soon: It has been  
suggested that a "garage sale" type of  
activity take place on the premises of Evelyn  
Musser, 3041 Cowell Rd., Concord, widow of  
Gil Musser WA6IWG who became a silent key  
Nov. 26, 1978. There is too much equipment  
to carry to our next auction, all neatly  
stored on shelves - some heavy and some  
antique, as well as some perfectly usable in  
modern equipment. If you are interested in  
helping on this project, contact any member  
of the MDARC Board of Directors or 1979 Pres.  
Hank Herting after Jan. 3, 1979. The equipment  
includes a Model 19 Teleprinter, S120  
Hallicrafters Receiver, HW 17 Heathkit AM  
2 meter Transmitter, BC221, a scope, some  
photographic equipment, assortment of parts,  
and connections, etc.

If you want a QST SUBSCRIPTION or RENEWAL  
(\$12) or WORLD RADIO SUBSCRIPTION or RENEWAL  
(\$6.75) make your check out to the Club and  
give or mail to our treasurer (see front  
page for address). If you want a NAMETAG  
(\$2), make out a check to the Club and  
give it to Harry Howe (see front page for  
address) up to Dec. 1, 1978. After Dec. 31,  
ask Dick Webster what to do.

Available for the asking: If you know  
the definition of sine, cosine, and tangent &  
if you are honestly curious about how to  
derive the various equations that tell you how  
to locate satellites that are in circular  
orbits, I'll tell you if you ask me. It's  
several pages long.

- W6CU

1979 ARRL Handbooks	9.75
1979 US Callbooks	15.95
1979 DX Callbooks	14.95
Encoder mic with automatic PTT	49.95
Auto Dialer 18 memories	129.95 99.95
Dentron Goodies:	
Jr. Monitor Tuner	79.50
160-10 KW Tuner	130.00 119.95
160-10 Super Tuner W/Mtr & SWR	149.95
MT 2000A 3KW Tuner	200.00 179.95
MT 3000A 3KW W/Mtr & SWR	350.00 309.95
GLA 1000 New KW Linear W/PS	379.95
MLA 2500B De Luxe Linear	900.00 799.00
All Band Doublet W/Lead in	24.50
W2 Dual Meter Wattmeter	99.50
Atlas 210x w/blanker	810.00
Atlas RX110 5 Band Receiver	229.95
Alda 103 3 Band Transceiver	495.00
Wilson MK IV 2 meter Portable	260.00 247.00
Tempo Syncom 1 (as available)	349.95
MFJ 901 De Luxe Tuner	59.95
MFJ 160-10 Tuner for Long Wire	39.95
Ameco PT-2 pre Amplifier for Xcvt	74.95
Ameco PLF pre Amplifier for Rcvr	49.95
Code Keys from	6.95
Ameco 110 volt code practice osc.	22.95
K.E. 80-40 Dipole Kit	25.95
K.E. 80-40 Trap Dipole Kit	39.95
Baluns	12.95
Ten-Tec Omni D Now in Stock	1069.00
Ham III Heavy Duty Rotor	196.00 129.95
Alliance HD-73 Heavy D. Rotor	155.00 119.95
DSI Freq. Counter to 500 MHz	149.95
NPC 4A 12V Pwr Supply	40.00 29.95
NPC 25A 12V Pwr Supply	150.00 124.95
Tempo Dual Meter Watt/SWR meter	47.95
Shure 444	70.75 42.50
Miller 8" De Luxe World Clock	44.95
Miller 12" De Luxe World Clock	69.95
Yaesu QTR24 World Clock	35.00
TPL 1-5w in 60-80 w out 2 meter amp.	179.00
TPL 10-20w in 50-90w out 2 meter amp.	149.00
KLM 10 in 70 out 2m Amp.	149.95
Yaesu FT 227R	385.00 369.95
Kenwood TR7400	449.00 405.00
KDK 2015R	430.00 408.50
Autek MK-1 Memory Keyer	99.95
MFJ Econo Keyer	39.95
MFJ Keyer W/Built in Paddle	54.95
De Luxe Keyer Paddle	29.95
Lots of used gear too!	

OPEN WEEK NITES 'TIL 8 PM UNTIL XMAS

## The Base Station

2101 Pacheco St. Concord, CA 94520

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### LAST MONTH'S PROBLEM

The characteristic impedance of an air-insulated parallel-conductor line is given by:

$$Z_0 = 276 \log_{10} b/a$$

where  $Z_0$  = Characteristic impedance  
 $b$  = Center-to-center distance between conductors  
 $a$  = Radius of conductor

Putting 300 ohms in for  $Z_0$  gives  $b/a$  approximately equal to 12.217. If we double the distance between conductors,  $b/a$  becomes 24.434. Working through the formula gives 383.08 ohms impedance.

The 1974 ARRL Radio Amateur's Handbook says though on page 573: "In solid-dielectric parallel-conductor lines such as Twin-Lead the characteristic impedance cannot be calculated readily, because part of the electric field is in air as well as in the dielectric."

Note by Editor: Don't throw away your old handbooks. Some of the ARRL handbooks after 1974 (including the 1979 handbook) do not contain this formula - and other things.

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### THIS MONTH'S PROBLEM

Is it possible to use one transmission line for two meters and low band at the same time with either rig transmitting or receiving? Is it possible to do that and use one of those remote antenna switches that requires only the actual transmission line to get its switching information?

WA6KGI

- o o o o -

### THIS MONTH'S CRYPTOGRAM by W6GZC

In a puzzle-type cryptogram each letter represents a different letter. To solve a cryptogram you must determine which letters the various cryptogram "letters" represent.

HINT - The 2nd word is sticker

N Q D R G Z M K O Y V G Z B T X

C B I C B "A B E M E G U G O K O M !"

Last month's solution: The doctor put me on a salt free diet. The salt is free, but everything else is costing me a fortune.

- o o o o -

From:  
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